

Health Consultation No. 9

(Further Evaluation of Alleged Past Exposure to Antimony in Private Well Water
Along Arch Avenue in Response to Community Concern)

PRECISION NATIONAL CORPORATION
(a/k/a PRECISION NATIONAL PLATING SERVICES)

CLARKS-SUMMIT, LACKAWANNA COUNTY, PENNSYLVANIA

EPA FACILITY ID: PAD053676631

AUGUST 8, 2001

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

Public Health Service

Agency for Toxic Substances and Disease Registry

Division of Health Assessment and Consultation

Atlanta, Georgia 30333

Health Consultation: A Note of Explanation

An ATSDR health consultation is a verbal or written response from ATSDR to a specific request for information about health risks related to a specific site, a chemical release, or the presence of hazardous material. In order to prevent or mitigate exposures, a consultation may lead to specific actions, such as restricting use of or replacing water supplies; intensifying environmental sampling; restricting site access; or removing the contaminated material.

In addition, consultations may recommend additional public health actions, such as conducting health surveillance activities to evaluate exposure or trends in adverse health outcomes; conducting biological indicators of exposure studies to assess exposure; and providing health education for health care providers and community members. This concludes the health consultation process for this site, unless additional information is obtained by ATSDR which, in the Agency's opinion, indicates a need to revise or append the conclusions previously issued.

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Prepared by:

Pennsylvania Department of Health
Under a Cooperative Agreement with the
Agency for Toxic Substances and Disease Registry

SUMMARY

At the request of the community near the Precision National Plating Services site (PNPS), the Pennsylvania Department of Health (PADOH), working under a Cooperative Agreement with the Agency for Toxic Substances and Disease Registry (ATSDR), prepared this Health Consultation (HC) to evaluate historic and current sampling data for antimony in private well water along Arch Avenue to determine if it was historically present at levels that could have harmed people's health.

PADOH and ATSDR conclude that:

- based on residential well data (past and present), past exposure to antimony in private well water along Arch Avenue was not present at levels that would harm the health of residents, including children.
- current exposure to antimony in residential water in the homes along Arch Avenue is not occurring and therefore does not threaten the health of people using the public water supply.

The interpretation, advice, and recommendations provided in this HC are based on the data currently available. In addition, the conclusions and recommendations of this HC are specific to the Precision National Plating Site. They should not be considered applicable to any other situations.

BACKGROUND AND STATEMENT OF ISSUES

Site History

Precision National Plating Services (PNPS) owned a chromium plating facility (the Site) at 198 Ackerly Road, approximately 0.75 miles north of Clarks-Summit, Pennsylvania (Figures 1 & 2). The 46-acre property is located in a rural area and has operated as a plating facility since 1956. Ernest V. Berry, Inc. began operations at the site in 1956 for the chrome plating and machining of locomotive crankshafts. Precision National Corporation (later called Precision National Plating Services Corporation) acquired ownership of the facility in 1971, and limited operations to reconditioning various engine components for the railroad, marine and power industries. The reconditioning process used trivalent and hexavalent chromium to apply a protective and wear-reducing coating. In 1975, Precision added a cylinder-lining division, which closed in 1997 [1].

From 1956 through 1970, chromium liquid wastes were disposed of in an unlined lagoon north of the plant building. When Precision acquired the facility in 1971, the lagoon was no longer used to dispose of liquid wastes generated by the plant. In 1971, under the supervision of the Pennsylvania Department of Environmental Resources, now known as the Pennsylvania Department of Environmental Protection (PADEP), Precision drained and back-filled the lagoon area. The facility ceased operations in 1999. Historical data indicate that hexavalent chromium has migrated off the Site in groundwater and has contaminated residential wells near the site along Arch Avenue (Figure 2) [1-8].

PADOH became aware of health concerns among community members during an initial site visit to the PNPS in November 1997. PADOH and ATSDR met with residents in their homes to gather their health concerns. The community near the site expressed concern that they may have been historically exposed to chromium or other contaminants from the site (including antimony)

and desired to have their past exposures evaluated [1]. PADOH and ATSDR prepared a series of health consultations to address their concerns [1-8].

Issue

In 1988, the United States Environmental Protection Agency (EPA) sampled four (4) residential wells downgradient of the site along Arch Avenue (Figure 2). Antimony was not detected in any of the homes. In 1992, the same area was sampled. Antimony was not reported to be present in any samples above the laboratory detection limit of 60 micrograms per liter ($\mu\text{g/L}$). However, for one sample the laboratory estimated a concentration of 31.7 $\mu\text{g/L}$. Since this concentration is well below the laboratory detection limit (at that time of 60 $\mu\text{g/L}$) and has not been duplicated in other sampling events at the same nearby wells. The validity of this result is suspect.

PADOH and ATSDR recommended in HC #8 that the homes along Arch Avenue be resampled for antimony using a laboratory method that permits lower detection limit quantification and committed to evaluating the results of the sampling and to determine their public health significance.

On November 1-2, 2000, PADEP resampled residential wells along Arch Avenue and analyzed the results using a lower detection limit of 2.0 $\mu\text{g/L}$ for antimony. Antimony was not detected in any of the samples collected. This HC determines if residents near the Site have been exposed to antimony from the site at levels that could have harmed their health.

SITE VISITS

Numerous site visits have been made by PADOH and ATSDR during the ongoing investigation of this site [1-8]. In addition to previous site visits, PADOH was present at the site on November 1, 2000 during PADEP's resampling for antimony.

CHILD HEALTH INITIATIVE

ATSDR and PADOH recognize that infants and children may be more sensitive to environmental exposure than adults in communities faced with contamination of their water, soils, sediments, or air. This sensitivity is a result of the following factors: (1) children are more likely to be exposed to certain media (e.g., soil, sediment, air, surface water or water from springs) because they play outdoors; (2) children are shorter than adults, which means they can breathe dust, soil, and vapors close to the ground; and (3) children are smaller, therefore childhood exposure results in higher doses of chemicals per body weight. Children can sustain permanent damage if these factors lead to toxic exposure during critical growth stages. ATSDR is committed to evaluating special interest at sites such as PNPS, as part of ATSDR's Child Health Initiative.

PADOH and ATSDR evaluated the likelihood that children living near the site may have been exposed to antimony in water from private wells along Arch Avenue at levels of health concern. PADOH and ATSDR did not identify any date (various years) where children were likely to have been exposed to antimony in private well water at levels that would have threatened their health.

DISCUSSION

ATSDR has developed health-based Comparison Values (CVs) which are chemical-specific concentrations used to determine environmental contaminants of health concern. We use CVs and information contained in current research literature to determine contaminants that require further evaluation. Exceeding of a CV does not necessarily imply that a health threat exists. Rather, it assists in identifying contaminants that require further investigation. These CVs include Reference Doses (RfDs), Environmental Media Evaluation Guides (EMEGs), Reference Dose Media Evaluation Guides (RMEGs) and Cancer Risk Evaluation Guides (CREGs). RMEGs serve as direct comparison guides when evaluating the potential for a contaminant to cause noncancer health effects. CREGs serve as direct comparison guides for evaluating the potential for a contaminant to cause cancer. We use ATSDR CVs, when applicable, to evaluate potential health effects following alleged past exposure to antimony in the private well water along Arch Avenue.

Toxicological Evaluation of Past Exposure

The historic antimony level of 31.7 µg/L (which was less than the detection limit of 60 µg/L) reported for one private well in the 1992 sampling was a laboratory estimate. In reality, both its presence and the reported estimated concentration are questionable. Because antimony was not detected in previous and subsequent sampling rounds, it is unlikely that residents would have consistently been exposed to that level, if it was present. Therefore, if past exposures occurred it is unlikely that health effects resulted. The most recent sampling (November 1-2, 2000) shows that antimony is non-detect at the lower detection levels of 2.0 µg/L which is below the comparison values (RMEGs) for children or adults of 4.0 µg/L and 10.0 µg/L, respectively. It is also below EPA's Maximum Contaminant Level of 6.0 µg/L and is not a health concern.

Toxicological Evaluation of Current Exposure

All the homes along Arch Avenue are currently using public water and therefore future exposure to antimony is also not an issue. Public water supply wells are not in the groundwater of plume contamination and are safe. The PADEP is responsible for permitting and monitoring public water supplies under the Safe Drinking Water Act. Public water supplies are in compliance with the Safe Drinking Water Act requirements. Under the Safe Drinking Water Act, all public water companies in Pennsylvania test for contaminants to ensure water quality and are mandated to report to their customers any contaminants which exceed the regulatory standards. Therefore, there is no current threat to public health from use of public water in the homes along Arch Avenue.

CONCLUSIONS

Based on historic and currently available residential well sampling data, PADOH and ATSDR conclude the following:

- 1.) Past exposure to antimony in a private well along Arch Avenue was not present at levels that would harm the health of residents, including children.
- 2.) Past exposure to antimony in a private well in the homes along Arch Avenue (if it occurred) represents no apparent public health hazard*.

- 3.) Current exposure to antimony in residential water in the homes along Arch Avenue is not occurring and therefore represents no public health hazard**. PADEP permits and monitors public drinking water supplies under the Safe Drinking Water Act (SDWA). This public water supply is in compliance with the SDWA requirements.

* The category "No Apparent Public Health Hazard" is an ATSDR designation that in the case of the PNPS is used where human exposure to contaminated media may have occurred in the past, but the exposure is below a level of health hazard and not expected to cause any adverse health effects.

** The category "No Public Health Hazard" is an ATSDR designation that in the case of the PNPS is used where there is no evidence of current exposure to contaminated media and future exposures to contaminated media are not likely to occur.

PUBLIC HEALTH RECOMMENDATIONS AND HEALTH ACTIONS

No actions to protect the public health are needed at this time.

REFERENCES

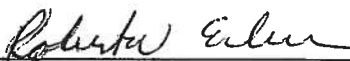
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PREPARER OF REPORT

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CERTIFICATION

This Health Consultation for the Precision National Corporation site was prepared by the Pennsylvania Department of Health under a cooperative agreement with the federal Agency for Toxic Substances and Disease Registry (ATSDR). It is in accordance with approved methodology and procedures existing at the time the health consultation was initiated.



Roberta Erlwein
Technical Project Officer, SPS, SSAB, DHAC

The Division of Health Assessment and Consultation (DHAC), ATSDR, has reviewed this health consultation and concurs with its findings.



Richard E. Gillig
Section Chief, SPS, SSAB, DHAC, ATSDR

FIGURES

Figure 1

Precision National Site Location Map

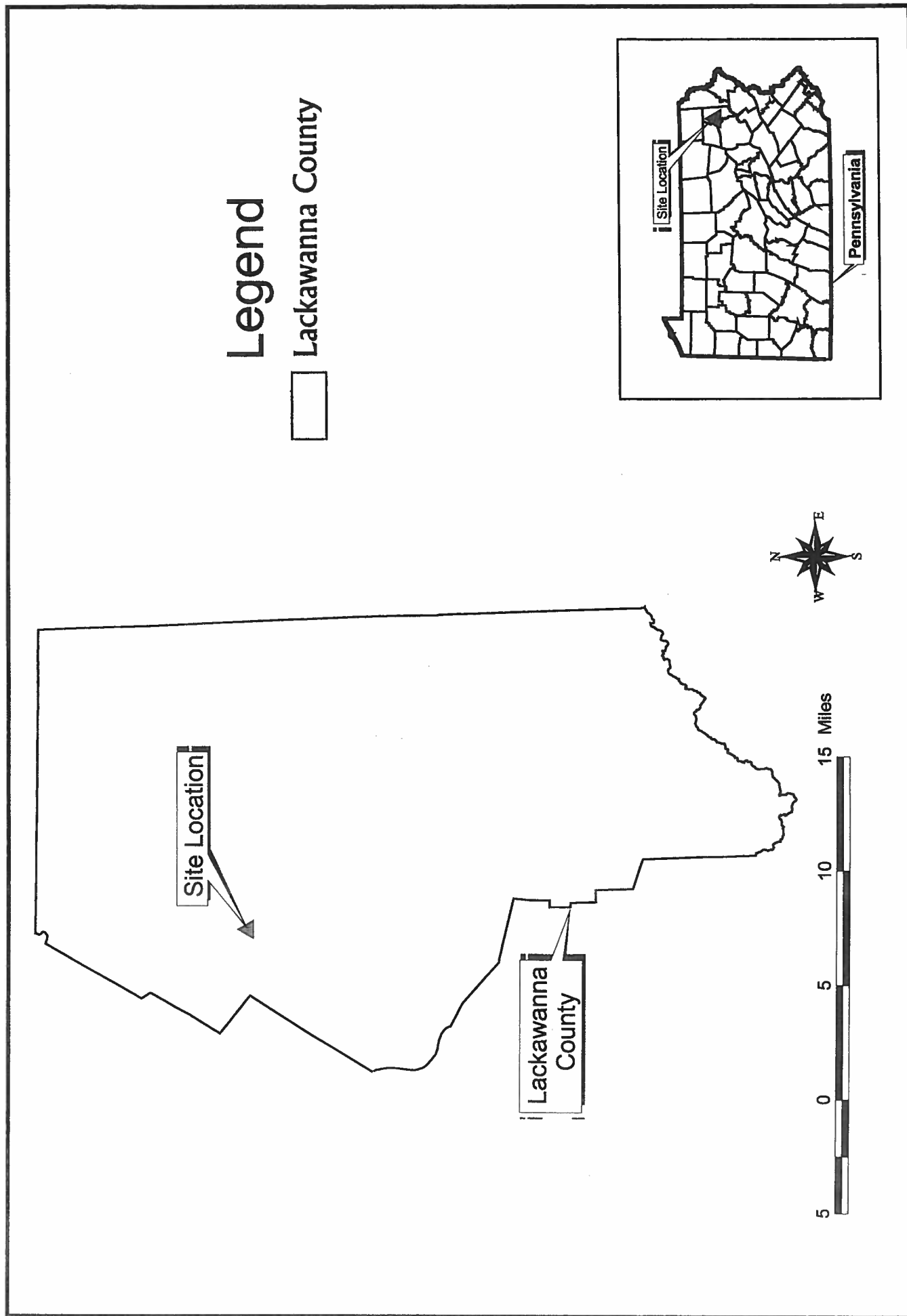
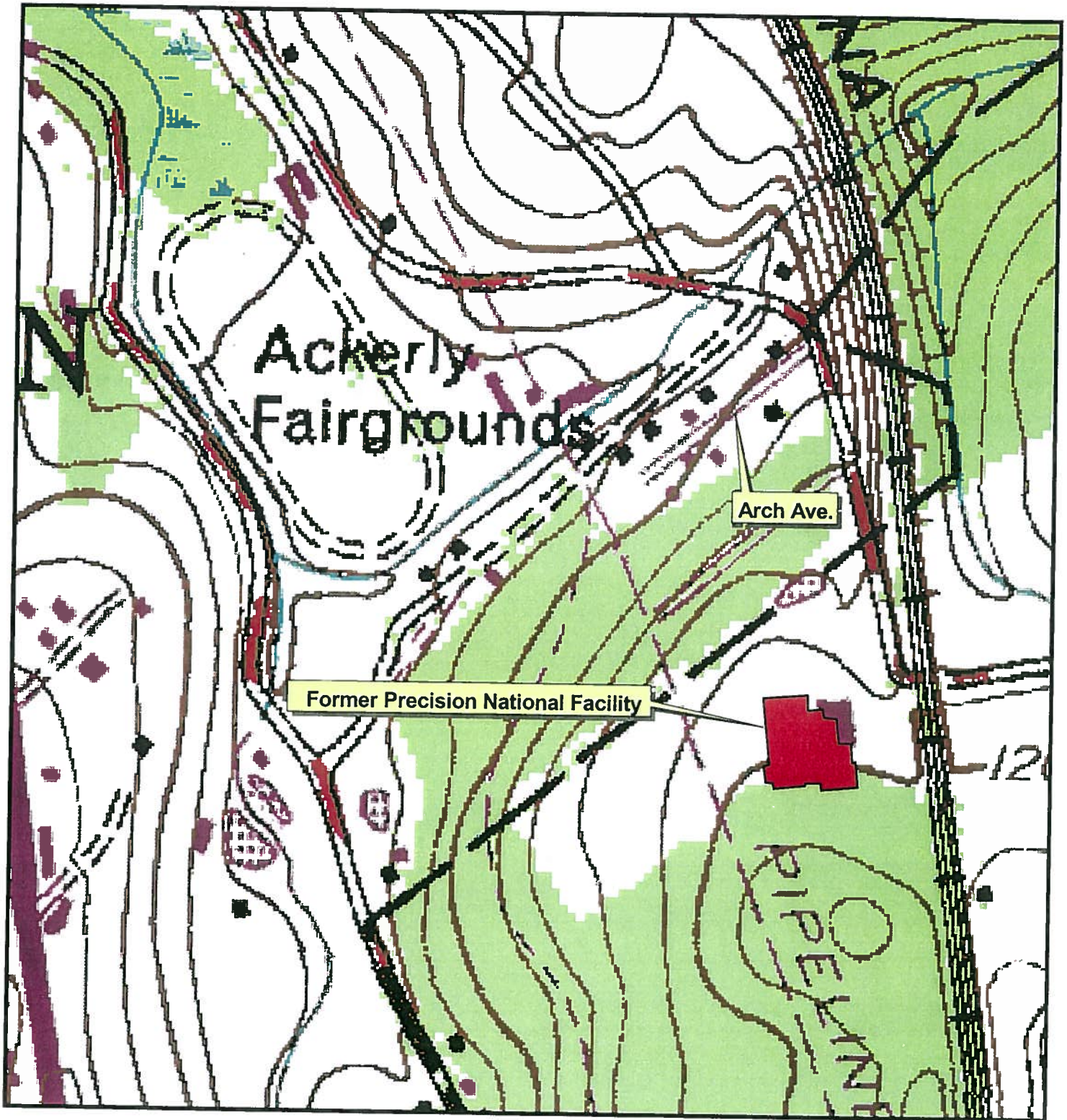


Figure 2

Arch Avenue Residences



500 0 500 Feet



Legend

 Former Precision National Facility

